

REMARKS

Claims 24, 26, 29-41, 43, 45, and 47-57 are pending in the present application. Claims 29 and 52-57 are allowed. Claims 24, 32, 36, 39, 41, 43, 45, 48, and 51 were amended in this Response. Claim 58 (formerly claim 46) was canceled, without prejudice. No new matter was introduced as a result of the amendment.

Regarding the claim objections and rejection under 35 U.S.C §112(2), claim 58 was cancelled in this response. Accordingly, both of the aforementioned objections and rejections are now rendered moot. Withdrawal of the same is earnestly requested

Claims 24, 26, 30-31, 33-36, 39, 41, 43, 45 and 47-50 were rejected under 35 U.S.C. §103(a) as being anticipated by *Yamane et al.* (U.S. Patent No. 5,764,404) in view of *Inagaki et al.* (U.S. Patent 5,745,283).

Claim 32 was rejected under 35 U.S.C. §103(a) as being anticipated by *Yamane et al.* (U.S. Patent No. 5,764,404) in view of *Inagaki et al.* (U.S. Patent 5,745,283) and further in view of *Onaka et al.* (U.S. Patent 6,067,187).

Claim 51 was rejected under 35 U.S.C. §103(a) as being anticipated by *Yamane et al.* (U.S. Patent No. 5,764,404) in view of *Inagaki et al.* (U.S. Patent 5,745,283) and further in view of *Chikuma et al.* (U.S. Patent 6,055,093). The Applicants respectfully traverses these rejections for the following reasons.

Specifically, *Yamane et al.* does not teach the feature of injecting at least one pump signal and at least one further pump signal into the optical transmission fiber to add or subtract energy to an from a signal using a Raman effect when at least two signal levels of the measured signal levels of at least one of the plurality of transmission bands are changed or absent from the transmitted broadband optical, the at least one pump signal having a wavelength less than a minimum wavelength of each of the plurality of transmission bands and the at least one further pump signal having a wavelength that is greater than a maximum wavelength of each of plurality of transmission bands recited in claim 24, and similarly recited in claims 45 and 52.

As argued previously, *Yamane* teaches multiplexing the optical signals to avoid reception error, however, the pump signals do not coincide with the signal levels as described in the present claims, since the system in *Yamane* does not care if the transmission bands are changed or absent (col. 9, lines 40-48). Again, the disclosure in *Yamane* uses amplifier control, which is

designed to compensate for the gain tilt caused by the amplifier itself. The pump lasers are applied in order to pump the amplifier and to cause gain. As a result, *Yamane* has a control loop (Fig. 15) to provide a constant gain for all channels of the WDM-signal. Accordingly, the amplifier control by *Yamane* controls the gain and the tilt of the amplifier medium and does not concern itself with changing or dropping of signal levels during transmission.

Furthermore, *Yamane* controls the amplifier through the amplification fiber, and not through a transmission fiber as claimed in the present application. The present claims recite a configuration where the pump lasers are used to regulate the power levels of the WDM-channels through transmission fiber instead of amplifier control. Depending on the selected wavelength or power level of the pump lasers, either an amplification or an attenuation of the WDM-signal spectrum results.

Also, the presently amended claims actively recite the use of the Raman effect on the transmission link (see present specification, page 3, lines 29-31, page 7 line 25+), which add or subtract energy to and from a signal. These features are not taught in *Yamane* or in any of the other cited documents. Regarding *Yamane*, the reference merely uses pump signals to add energy to the amplifying Erbium doped fibers.

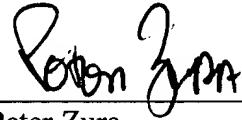
Additionally, the other cited prior art does not cure the deficiencies of *Yamane et al.* and *Inagaki* discussed above. In light of the foregoing comments, the Applicant respectfully submits that claims 24 and 45, and all claims that are dependent therefrom, are allowable over the prior art of record and requests that the rejection be withdrawn, accordingly. The Applicant respectfully submits that the application is in condition for allowance and requests a timely Notice of Allowance be issued in this case.



Respectfully submitted,

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